

The Carnivorous Land Snail
Gulella (Huttonella) bicolor (Hutton, 1834)
in Australia (Pulmonata : Streptaxidae)

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SUMMARY

The streptaxid, *Gulella (Huttonella) bicolor* (Hutton) is recorded from Australia for the first time. This species has been spread widely through tropical areas of the world by commerce. The implications of its presence in Australia are briefly discussed. A description of the shell together with figures are presented.

INTRODUCTION

The pulmonate family Streptaxidae, a group of carnivorous land molluscs, is widely distributed in tropical and sub-tropical regions of the world. The family ranges from South America, Africa through India to Japan and Asia. The eastern limit of the family in Asia is reached in the Indo-Australian Archipelago (Van Bruggen, 1972). While endemic representatives occur in Borneo, Malaya, Celebes, Phillippines none are known from the Australian region.

Of the many genera of Streptaxidae, some are widespread. One species, *Gulella (H.) bicolor* (Hutton) has a circumtropical distribution. Previously known from Africa, India, Philippines, Borneo, Celebes, W. India and even Florida (U.S.A.), it is now recorded from northern Australia. Its present distribution is largely the result of transport by human agencies.

Material used in this study is housed in the Australian Museum, Sydney (AM) and the Field Museum of Natural History, Chicago, U.S.A. (FMNH).

TAXONOMY

Gulella (Huttonella) bicolor (Hutton, 1834)

(Figs. 1a, 1b)

MATERIAL

Northern Territory: Bamyili Reserve, via Katherine, in school grounds under bricks and wood, (7 adult shells, AM C.119307, V. Kessner, 8 March, 1978); Wallaby Beach, Gove, on sand and in grass/vine litter just behind beach, (2 adult and 1 juvenile shells, AM C.121212, P.H. Colman, 25 March, 1980); Sta. WA-103, East Point Forest Reserve, Darwin (1 specimen, FMNH. 182321, A. Solem and L. Price, 7 March, 1974).

DESCRIPTION

Shell small, subcylindrical, shiny, transparent. Colour, creamy-white. Narrowly perforate. Whorls 6-7, regularly increasing. Sutures impressed, regularly crenulate.

Crenulations caused by coronal swellings on the upper edge of lower whorl. Apex depressed but not flat. Weak growth striae present, crossed by barely visible transverse striae. Growth striae becoming very pronounced on the latter half of the body whorl. Body whorl with two external depressions, corresponding to position of basal and palatal teeth.

Aperture subquadrangular, with four barriers. Columellar lamella broad, directed inwards, sinuate at inner edge. Parietal lamella long, edge curved to the right, projecting beyond outer rim of aperture, continuous with right lip. Palatal tooth large, horizontal, directed inwards. Basal tooth small, located inside the peristome on the left hand side of lower lip. Both the palatal and basal teeth are formed by infoldings of the shell wall. Peristome thick, not continuous, strongly reflected, granular. Dimensions of shell: Height 6.7mm. Diameter 2.0mm.

COMPARATIVE REMARKS

The strongly reflected lip and apertural barriers of *G. bicolor* easily distinguish it from the Australian subulinids which have a grossly similar shell outline but possess a simple lip and lack barriers. Species of the Australian chondrinid genus *Australbinula* have a somewhat similar arrangement of apertural barriers, however they lack the infoldings of the body whorl which are present in *G. bicolor*. Compared with *G. bicolor* they are much smaller (less than half the size) and lack the glossy appearance and crenulated sutures of the former.

DISTRIBUTION

Africa, Seychelles, Mauritius, India, Indo-Malay, Archipelago, W. Indies, U.S.A. (Florida), Fiji, New Guinea, Australia.

TYPE LOCALITY

Mirzapur, India. While Hutton (1834) originally described *G. bicolor* from India, Van Benthem Jutting (1961) suggested that the species may have its origin in the off-lying islands of East Africa.

DISCUSSION

The discovery of *G. bicolor* in Northern Australia adds another widespread introduction to the Australian terrestrial mollusc fauna. While many of the known introductions have arrived from the Northern Hemisphere i.e. North America and Europe, the presence of widespread Southern Hemisphere forms has been largely undocumented. Solem (1959) showed that the New Caledonian enid, *Rhachistia histrio* (Pfeiffer) was in fact a widespread species in the tropical regions, occurring from Africa to India and New Caledonia and the east coast of Australia where it was recorded as *Rachispeculum bidwilli* (Cox).

In a later publication Solem (1964) analysed the introduced molluscs of New Caledonia and demonstrated the impact that 19th century trade routes and other patterns of human activity have had on the distribution of a number of widespread terrestrial molluscs. Undoubtedly, similar events have had an influence on the Australian continent. Therefore it is not surprising to find a widespread tropical species such as *G. bicolor* in Australia. A less parochial approach than that employed by previous workers e.g. Iredale, will most likely reveal the presence of other widespread tropical species in the Australian fauna.

Considering that *G. bicolor* lives among leaf litter (Van Benthem Jutting 1961), it shares a common habitat with a large number of Australia's native terrestrial molluscs. The carnivorous habit of the species may therefore have a number of important implications for the native land molluscs. Annandale and Prashad (1920), observed and reported a number of instances of *G. bicolor* preying on the subulinid *Lamellaxis gracilis* (Hutton), while Van Bruggen (1967) stated that streptaxids have a varied diet of invertebrates including urocyclids, achatinids, and pupillids.

Whether *G. bicolor* is widespread in Northern Australia has yet to be demonstrated. Much collecting remains to be done in the area surrounding the sites of the present discovery. However, many streptaxids are extremely drought resistant (Van Bruggen, 1967), in which case this species is liable to be dispersed across apparently unfavourable

stretches of desert.

As the first record of a streptaxid in Australia, the occurrence of *Gulella (Huttonella) bicolor* (Hutton) in northern Australia represents a significant addition to the Australian land snail fauna.

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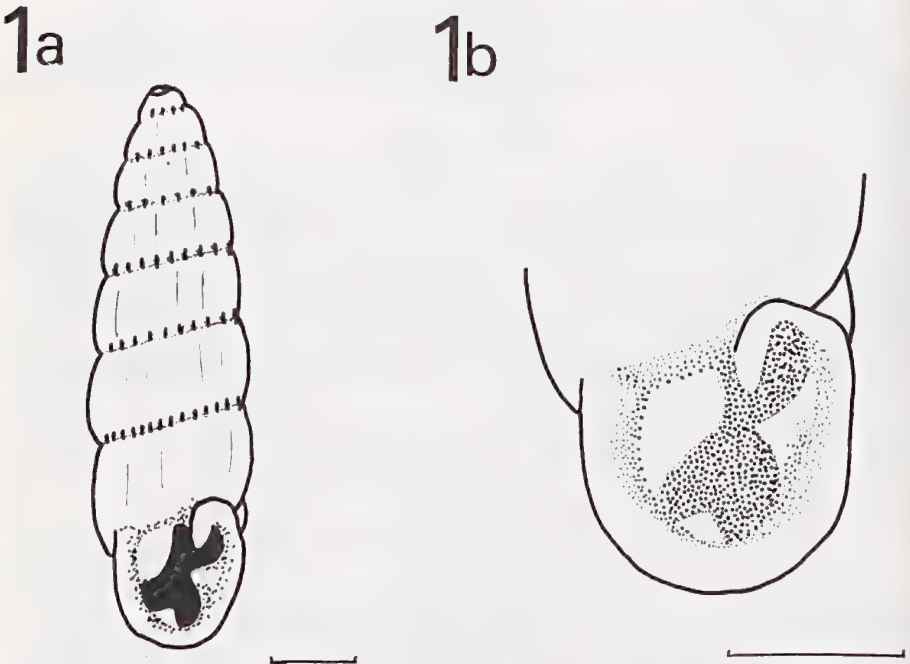


Figure 1a-b *Gulella (Huttonella) bicolor* (Hutton, 1834)
Bamyili Reserve, via Katherine, N.T. Kessner.
AM C.119307.
Scale lines equal 1mm.